2023 Star Catchers Reunion
Maj. Gen. Christopher Povak, NRO Deputy Director
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INTRODUCTION

In the summer of 1996, I arrived in Sunnyvale, CA as a fresh-faced Lieutenant ready to start my new job at Onizuka Air Station supporting satellite operations for a recently declassified organization called the NRO. It turned out that my new office had a rich history harkening back to the earliest days of the space age and the nation's space reconnaissance program.

Then called the Satellite Test Center, the "Blue Cube" as it was affectionally referred, was the mission command center for the NRO's first photo reconnaissance satellite system named: CORONA.

Years later, many of my gray-haired colleagues, the men and women who taught me pretty much anything I know about space operations, could trace their own lineage back to supporting operations from CORONA and its follow-on programs: GAMBIT and HEXAGON. So, from very early on in my career, which now includes 8 different assignments and over 20 years serving in the NRO, I gained a great appreciation for the importance of our organization's history and the mission excellence within our teams including engineers, rocket scientists, operators and highly skilled air crews.

These amazing pioneers created the foundation of the NRO and delivered vital capabilities and information that have ensured this nation's security for over 60 years. So, it is truly an honor for me to be here this evening to celebrate an incredible group of Airmen who played such an important role in the NRO's and our nation's history.

I appreciate that many of you know all about the Star Catchers' legacy – some of you actually lived it. But for those who don't, I'd like to tell you a little bit about how gutsy and courageous these guys were. For the Star Catchers in the group, please bear with me. But last time I checked, events like these are largely about retelling war stories, aren't they?

On August 19, 1960, Captain Harold Mitchell flew his C-119 "Flying Boxcar" – lovingly called the "Old Lady" – 300 miles southwest of Hawaii. His objective, as most of you know, was to catch, in mid-air, a descending parachute containing a film canister that had originated from space.

To accomplish this herculean feat, he and the other members of his 6593rd crew – including a copilot, navigator, flight engineer, a four-man team of load masters (two on each side of the aircraft), a winch operator, and an aerial photographer – had to work in sync. To catch and retrieve the parachute, the loadmasters manually attached a pair of 34-foot-long poles to brackets on the aircraft and lowered them out the back of the plane's cargo bay.

Between the poles was strung nylon cord with large copper hooks that caught the parachute as the aircraft flew over it, snagging it along with its precious cargo.

The nylon cord, chute, and film bucket were then brought onboard by the recovery crew who were attached to the aircraft with their own safety cords to prevent themselves from falling out the back of the plane.

Talk about a risky business!

At the NRO, we often talk about innovation being part of our DNA – a hallmark of our 62-year legacy. And this legacy of ingenuity began with amazing teams like the 6593rd Test Squadron (special) and later the 6594th Test Group (special).

6593rd TEST SQUADRON/6594th TEST GROUP HISTORY

The Star Catchers' story began during the Cold War. The United States was faced with the daunting challenge of understanding the growing Soviet arsenal amid reports that the Soviets were both outpacing and out-arming us and had more intercontinental ballistic missiles than we did. Our leaders needed to know what we didn't know.

In the late 1950s, the U.S. began developing reconnaissance satellites that could capture images of territory controlled by our Cold War adversaries. Probably the most vital of these programs was CORONA, developed by the CIA, in cooperation with the U.S. Air Force.

Scientists and engineers determined the fastest way to obtain that imagery from space was to develop "return capsules" to carry the film back to earth. But there was one major challenge: How would we retrieve them?

The first 12 attempts to successfully launch and retrieve the CORONA return vehicle failed. On the 13th, a return capsule, carrying among other things a brand-new 50-star American flag (but no film), successfully deorbited, splashed into the ocean, and was retrieved...making it the first successful recovery of an object from space. Just eight days after the launch of CORONA 13, Captain Mitchell's crew caught the return capsule from the 14th mission– retrieving the first-ever intelligence photos of the Earth taken by a satellite.

Mitchell said he didn't know there was film in that bucket until he landed back in California. Corona's film covered 1,650,000 square miles of the Soviet Union – more coverage than all the 23 U-2 overflights of the Soviet Union combined – and included area that had never been reached by the U-2. A week later, those photos reached President Eisenhower's desk, and not long after, President Eisenhower set in motion the establishment of the NRO.

The Star Catchers flew more than 360 missions in support of the NRO with a success rate above 98 percent. The recovered film provided vital intelligence about the denied areas in the Soviet Union, Eastern Europe, China, and Vietnam and helped the U.S. develop military strategies and national policies to contain the communist threat.

And this revolutionary breakthrough in intelligence gathering literally altered the course of the Cold War.

The ingenuity of Corona led to other more sophisticated systems before our eventual shift to digital imagery – systems such as Gambit, and Hexagon. These new systems kept the Test Group in business for the next 15 years.

When Hexagon replaced Corona, its multiple recovery buckets carried nearly 250 times more film than the first successful Corona mission. Each photo frame from Hexagon covered areas as wide as 370 nautical miles…or the distance from Washington DC to Cincinnati, OH. And the fidelity of its images improved from 40 foot resolution (the size of a house or large airplane) to just over 2 feet (the size of a small truck).

Hexagon had a major effect on arms control agreements. The system, first launched in 1972, was able to photograph the entire Soviet landmass, making it easy to identify any new missile programs or complex construction.

Hexagon allowed U.S. policymakers to agree to both the ABM Treaty and the SALT I Interim Agreement, both signed in 1972. These agreements kept Russian and U.S. nuclear weapons' size and number constant and known for the next 30 years.

Gambit was our premiere high-resolution satellite for two decades and allowed us to determine the capabilities of nearly every Soviet weapon, both in development and deployed in the field, that was bigger than a Jeep.

THREAT PICTURE TODAY

Fast forward to today, we still face threats from Russia, along with other competitors around the globe. Given the proliferation of space enabling technologies, many of these actors are gaining on the U.S.'s technology advantage at a rapid pace.

China, in particular, is closing this technology gap. They're investing significant money, manpower, and resources to challenge America's dominance in space, developing increasingly capable military space systems, a troubling array of new, sophisticated, and lethal weapons and a growing arsenal of anti-satellite capabilities.

Today, several nations, notably China and Russia, are actively developing ground and space-based weapons specially designed to interfere with or destroy our systems in space. These counterspace capabilities include missiles and weapons systems designed to deliver directed energy, electronic warfare, and cyberattacks; all of which threaten our ability to freely access and operate in space.

MEETING TODAY'S CHALLENGES THROUGH CAPABILITIES

At the NRO, we're answering these challenges by advancing intelligence, surveillance, and reconnaissance (ISR) beyond what was thought possible. And we are currently undergoing the largest evolution of our space and ground systems in NRO's history, literally every portion of our entire architecture.

We're putting new capabilities on orbit, on the ground, and everywhere in between. We're integrating automation and machine learning into everything we do. We're exploring and developing emerging space-based technologies – such as hyperspectral imagery and larger-

scale optics. And we're working closely with industry to integrate those innovative capabilities into the networks used by our intelligence, military, and (in some cases allied) partners around the world.

We're increasing the resilience and survivability our enterprise – in space, ground, cyber, our workforce, supply chains, even our launches. Last year we launched five missions into orbit, each of them designed to meet our diverse mission needs – different launch partners, different locations (even different continents), different rocket types, and different on-orbit payloads.

And we're expanding our space architecture building the most capable, diverse, and resilient overhead constellation in our history. In fact, within the next decade, we expect to quadruple the number of satellites we have on orbit – from dozens to hundreds.

These satellites – large and small, in multiple orbits, both national an commercial – will deliver more than 10 times as many signals and images and 100 times more data as we're collecting today.

With so many new satellites in our constellation, we will need completely new ground systems to enable us to task, process and disseminate in a totally automated process. So, we're investing in artificial intelligence and other cutting-edge computer technologies that allow the system to learn and decide what product or combination of products may be needed to address a particular intelligence issue. For example, if you need to know what's happening after an earthquake in Indonesia, you don't need to capture data from every satellite. Based on conditions in the area of collection and the actual question our analysts are trying to answer, our systems will be able to task the right satellites to collect the right data to provide an informative product to satisfy our customer's request.

We're making these major investments and employing these cutting-edge technologies so the NRO can provide more valuable information on operationally relevant timelines. And to enable our warfighters, analysts, and policy makers to receive the real-time situational awareness and vital intelligence they need, when they need it.

CONCLUSION

At the NRO, we have a long history of pushing boundaries, while using the vantage point of space to make America and our Allies safer and stronger. We owe this legacy of innovation in part to the Star Catchers.

With each new advancement in ISR technology, we've increased the amount of intelligence collected from space and decreased the amount of time needed to get that intelligence where it needs to be.

And as far as I know, we no longer need to hang out of airplanes to deliver that critical intelligence.

Most of those early, courageous Star Catcher crewmen didn't know what was in the capsules they recovered or their program's true mission. But they knew their work was incredibly important to their country. And they were willing to do whatever they could to complete the mission.

Daniel Hill was a teenaged enlisted loadmaster on Captain Mitchell's first successful film capsule recovery. In the NRO's book *Corona Star Catchers*, he said had he not been interviewed about his experiences, "I would have gone on with my normal everyday life, growing older, perhaps never to search the past adventures that I had with the 6593d. Having over 1,000 hours of flight time in our Old Lady #37… was a thrill and an extreme high point in my life. Our 6593d was titled a "(Special) Squadron" from the start; it truly deserved that name." Well, Daniel, I agree. The 6593d Squadron as well as the 6954th Test Group directly enabled the establishment and evolution of the world's leading ISR organization.

I imagine many of the Star Catchers gathered here today feel the same way.

Thanks to Daniel Hill, Captain Mitchell and all of the other members of the Test Group the legacy of the Star Catchers lives on. We at the NRO are committed to continuing that legacy as we strive to accelerate our nation's intelligence advantage and remain the world leader in space.

To our Star Catchers, please know that you are forever part of NRO's history. And our NRO family.

And on behalf of the NRO leadership team, thank you for your service to our country.

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